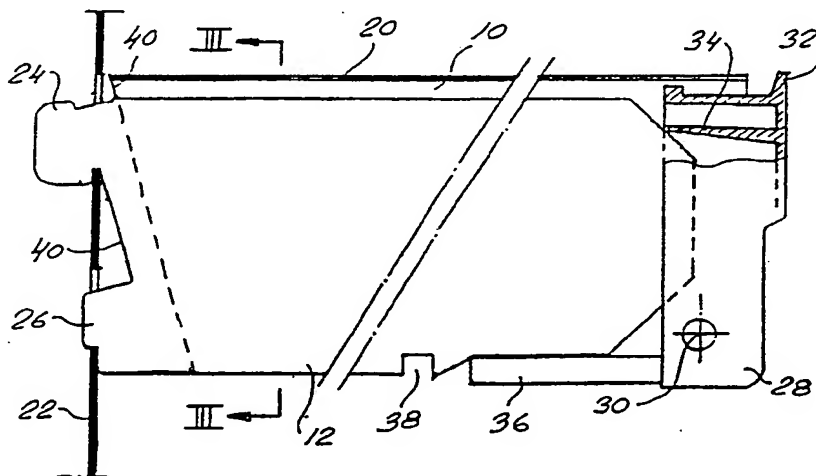




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/SE89/00456 (22) International Filing Date: 31 August 1989 (31.08.89) (30) Priority data: 8803077-0                      2 September 1988 (02.09.88)    SE (71) Applicant (for all designated States except US): SINTEK INTERNATIONAL AB [SE/SE]; Söder Mälarstrand 71, S-117 25 Stockholm (SE). (72) Inventor: and (75) Inventor/Applicant (for US only): ALNENG, Carl-Göran [SE/SE]; Robertsviksvägen 16, S-182 35 Danderyd (SE). (74) Agent: NIHLMARK, Bengt; Kungsgatan 17, Box 7701, S-103 95 Stockholm (SE).	(81) Designated States: AT (European patent), AU, BE (European patent), CH (European patent), DE (European patent), DK, FI, FR (European patent), GB (European patent), IT (European patent), JP, LU (European patent), NL (European patent), NO, SE (European patent), US.  Published With international search report.	

(54) Title: AN ARRANGEMENT IN TRAY, SHELF, DRAWER OR LIKE STRUCTURES



## (57) Abstract

An arrangement in shelf, tray, drawer structures (10) or like structures of the kind which can be moved between an inserted position, for the storage of articles, e.g. packages such as drugstore packages, and a position of use in which the packages can be removed from the trays or the like. The trays or the like are mounted on brackets (12) which are fitted to a frame structure (22) in a manner to enable the brackets to be adjusted between mutually different positions, and optionally to be removed from the frame structure. The trays, drawers or the like include catch means (36) which are intended to latch the trays or the like in a fully inserted position in the brackets (12). The brackets (12) can be adjusted on the frame structures (22) such as to extend horizontally or at an inclined angle. The trays or drawers and/or the brackets are configured so that when the brackets (12) are in their horizontal positions the trays or drawers cannot be inserted to their full extent, thereby preventing the catch means (36) from coming into operation. This can be achieved, for instance, by inclining the end wall surface of respective trays, such that the end wall will slope obliquely inwards to the structure (22) from the bottom of respective trays to their upper side. When the brackets (12) are adjusted to their inclined positions, the trays or the like (10) can be fully inserted and thus latched by the catch means (36).

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An arrangement in tray, shelf, drawer or like structures.

5 The present invention relates to an arrangement in tray,  
shelf or like storage structures of the kind in which  
the trays or shelves can be moved between an inwardly  
inserted position and an outwardly withdrawn position on  
10 bracket arrangements which are mounted on two sides of  
the trays, shelves or the like and which are movably or  
detachably mounted on a frame or stand structure.

When storing bottles, cans (tins) and other packaging  
units, e.g. packaged medicines, drugs, etc., in chemist  
shops, drug stores and like places, the packages are  
15 normally placed on withdrawable, sloping shelving sys-  
tems, or in cassettes, drawers or like storage devices.  
These storage devices are filled from the rear of an  
extended or withdrawn storage device, whereas the stored  
packaging units are removed from the front part of the  
20 device with said device in its inwardly displaced or  
inserted position. Continuously adjustable partitions  
form elongated compartments along the whole length of  
the storage device, in its withdrawal direction, thereby  
ensuring that the packages will be removed in their  
25 correct order of use. One such arrangement is described,  
for instance, in Swedish Patent Specification  
No. 16278/68.

The aforesaid cassette storage system is best suited for  
30 frequently purchased drugs, where each drug is stored in  
large quantities and where it is necessary to store the  
drugs in long rows in the withdrawal direction of the  
cassette or drawer. Drugs which are purchased less  
frequently and which are consequently stored in smaller  
35 numbers are kept in standard, horizontal drawers which

are extended to their full extent, both when placing packaged units into the drawers and when removing said units therefrom. Such drawers will also preferably include smaller compartments, located one behind the other.

The drug storage methods applied hitherto require the provision of two mutually different storage systems, since the sloping withdrawal cassettes or drawers need to be fitted with catches in order to prevent the drawers from sliding out under their own weight. The horizontal drawers, on the other hand, are always drawn out to their full extent, and do not need to be fitted with such catches, but shall instead be capable of moving smoothly in and out.

The main object of the present invention is to provide an arrangement of the kind described in the introduction which will enable one and the same storage structure to be used as a horizontally withdrawable drawer structure with no active catch facility or as an inclined cassette or drawer storage structure operating with an active catch facility.

This object is achieved with the inventive arrangement having the characterizing features set forth in the following claims.

The invention will now be described in more detail with reference to an exemplifying embodiment thereof illustrated in the accompanying drawings, in which Figure 1 is a schematic side view of a cassette or drawer storage arrangement which is adapted for use in a horizontal drawer mode in which the catch facility is passive; Figure 2 is a side view of the arrangement, similar to

Figure 1, with the arrangement adjusted to a sloping cassette or drawer mode in which the catch facility is active; Figure 3 is a sectional view taken on the line III-III in Figure 1; and Figure 2 is an enlarged perspective view of the front part of the cassette or drawer illustrated in Figures 1 and 2.

The storage arrangement illustrated in Figure 1 includes a drawer or tray 10 for storing packages, e.g. packaged drugs or medicines, in tin or bottle form. The drawer 10 is withdrawably mounted in brackets 12 located on respective opposite sides of the drawer, via an intermediate rail 14, and the bracket structures 12 and the drawer 10 are each fitted with respective wheels 16, 18 which run in U-shaped profiles on the rail 14. The drawer 10 has an upper flange 20 which covers the rail 14 and the bracket structures 12 when the drawer is fitted into a frame structure 22. The brackets 12 are mounted on the frame structure 22 in a conventional manner, with the aid of hook elements 24, 26 which engage in slots in the frame 22. The end of the drawer 10 remote from the frame 22, i.e. the outer end of the drawer, is fitted with a grip 28, which is pivotally mounted on journals 30 provided on mutually opposing side faces of the drawer 10. The grip has an upstanding flange 32 which is gripped by the user when wishing to pull out the drawer 10. The grip 28, which may be made of a plastics material, is also provided with a resilient tongue 34, which when the drawer 10 is fully inserted functions to lock a drawer catch arrangement hereinafter described. Located at the bottom of the grip 28 is a leg 36 which extends along the outside of respective brackets 12 in the insertion direction of the drawer. The leg 36 includes a part (Figure 4) which extends transversely to said drawer insertion direction

and which, when the drawer is fully inserted in accordance with Figure 2, is intended to engage in a recess 38 provided in a respective bracket 12, such as to prevent the drawer from sliding along the brackets 12 under its own weight. The aforesaid resilient tongue 34 on the grip 28 will abut an inclined surface on the bracket 12, when the drawer is pushed to its fully closed position, and therewith prevent the leg 36 from swinging out of engagement with the recess 38. Consequently, in order to open the drawer, it is necessary to press the upper part of the grip 28 inwards, against the spring force of the resilient tongue 34.

In accordance with the present invention, the drawer 10 and the brackets 12 are configured so that the drawer 10 can be used in a horizontal storage mode in which the catch is passive, or in an inclined storage mode in which the drawer or cassette 10 coact with a drawer catch. In the case of the present invention this is achieved by providing the drawer with stop means which, when the arrangement is in its horizontal draw mode, are operative to prevent the drawer from being fully inserted, i.e. from being pushed fully home, as illustrated in Figure 1. In the case of the illustrated embodiment, the stop means is provided by configuring the 10 with an inclined rear wall surface 40, such that when the arrangement is in its horizontal drawer mode, the upper part of said rear wall surface 40 will come into abutment with the frame 22 before the leg or catch 36 reaches the recess 38. As shown in Figure 1, in this horizontal mode of the storage arrangement the catch legs 36 are unable to reach and engage the recesses 38 in the brackets 12, therewith enabling the drawer to be withdrawn easily and smoothly, in the absence of an active drawer latching effect. The hook elements 24, 26

on the brackets 12 and the intermediate bracket part 42 are configured to enable the brackets 12 to be inclined to the vertical, as shown in Figure 2, so as to enable the drawer to slope and to be used for sloping storage purposes in the aforescribed manner. The storage arrangement is brought to its sloping storage mode, by rotating respective hook elements 26 in their slots in the frame 22, so that the intermediate bracket part 42 located between said hook elements 24, 26 is brought into abutment with the vertical face of the frame 22. The drawer 10 can then be pushed fully home, along the brackets 12, therewith enabling the catch legs 36 to snap into the recesses 38 provided in the brackets 12, in the aforesaid manner, said legs being locked in the recesses through the action of the locking tongues 34, such as to prevent the drawer from sliding open under its own weight.

It will be evident from the above description that the inventive arrangement enables one and the same storage device, e.g. tray or drawer 10, and one and the same bracket structure 12 to be used as a horizontally moveable drawer arrangement in which the catch facility remains inactive, or as an inclined drawer or cassette arrangement in which the catch facility is brought to an active state. This storage arrangement affords two important advantages: The manufacturer can produce the dual-purpose storage arrangement in large numbers, instead of manufacturing each separate aspect of the arrangement separately, whereas the user obtains a product which can be readily adapted between a storage arrangement for the storage of frequently purchased packaged goods and a storage arrangement for packaged goods which are bought less frequently, e.g. for the storage of drugs and medicines in drug stores and

5 chemist shops. Both advantages have favourable economic consequences, since the invention solves the problem of latching or not latching the drawer, depending on whether the user selects a sloping or horizontal drawer position when mounting the brackets in the wall-carried rails or frame structure normally used to support storage module systems.

10 It will be understood that the invention is not restricted to the described and illustrated embodiment, and that modifications can be made within the scope of the following claims. Although the invention has been described in relation to drawers for the storage of  
15 packaged units, it will be understood that the invention can be applied to other storage systems utilizing alternate horizontal and sloping storage facilities employing different kinds of storage devices, such as shelves, trays, baskets etc. Furthermore, the arrangement may include drawer and bracket configurations different to  
20 those described and illustrated for terminating horizontal inward movement of the drawer before the catch arrangement is able to come into operation, or include separate devices which function to the same end. The illustrated embodiment, however, can be manufactured  
25 readily and cheaply and will encroach on the available drawer space to the least possible extent.

30

35



CLAIMS

- 5        1. An arrangement in tray, shelf or drawer structures or  
like structures arranged for movement between an in-  
10        inserted storage position and a withdrawn use position in  
brackets which are located on mutually opposite sides of  
the trays or the like and which are movably and/or  
15        detachably mounted on a frame structure, characterized  
in that the trays or the like include catch means (36)  
operative to latch the trays in a fully inserted posi-  
20        tion in the brackets (12); in that the brackets (12) can  
be pivoted between a horizontal position and an inclined  
position; and in that the trays or the like (10) and/or  
the brackets (12) are so configured that when the  
brackets (12) are adjusted to their horizontal position  
movement of the trays or the like is stopped before said  
trays or the like are fully inserted and before said  
25        catch means (36) have come into operation, whereas when  
the brackets (12) are adjusted to their inclined posi-  
tions, the tray or the like can be fully inserted and  
therewith latched by said catch means.
- 30        2. An arrangement according to Claim 1, characterized in  
that the trays or the like (10) are configured with a  
sloping rear wall surface (40) which is intended to abut  
said frame structure such as to stop movement of the  
trays or the like in their insertion direction before  
35        the catch means (36) can reach its effective latching  
position.
- 35        3. An arrangement according to Claim 2, characterized in  
that the rear end surface (40) of the trays or the like  
(10) slopes at an angle such that when the brackets

(12) are adjusted to their inclined positions said rear edge surface will extend parallel with and contiguous to the vertical edge surface of the frame structure (22).

- 5        4. An arrangement according to any one of Claims 1-3, characterized by a grip (28) which is mounted on the front end of the trays or the like (10) for pivotal movement about a horizontal pivot axle (30) located on the lower edge of the tray or the like and which is provided with a locking device (36) which when the tray is fully inserted is intended to engage a complementary locking device (38) on respective brackets (12), the mutual engagement between said locking devices (36, 38) being engaged and disengaged by pivoting the grip (28) about said pivot axle (30).
- 10
- 15
- 20        5. An arrangement according to Claim 4, characterized in that the locking device on said grip (28) comprise one or more outwardly projecting legs (36) intended for engagement in recesses (38) provided in the brackets (12).
- 25        6. An arrangement according to Claim 4 or 5, characterized in that the grip (28) is biased in the engaging position of said locking means by a resilient tongue (34) which in the fully inserted position of a tray abuts one edge of a respective bracket.
- 30
- 35



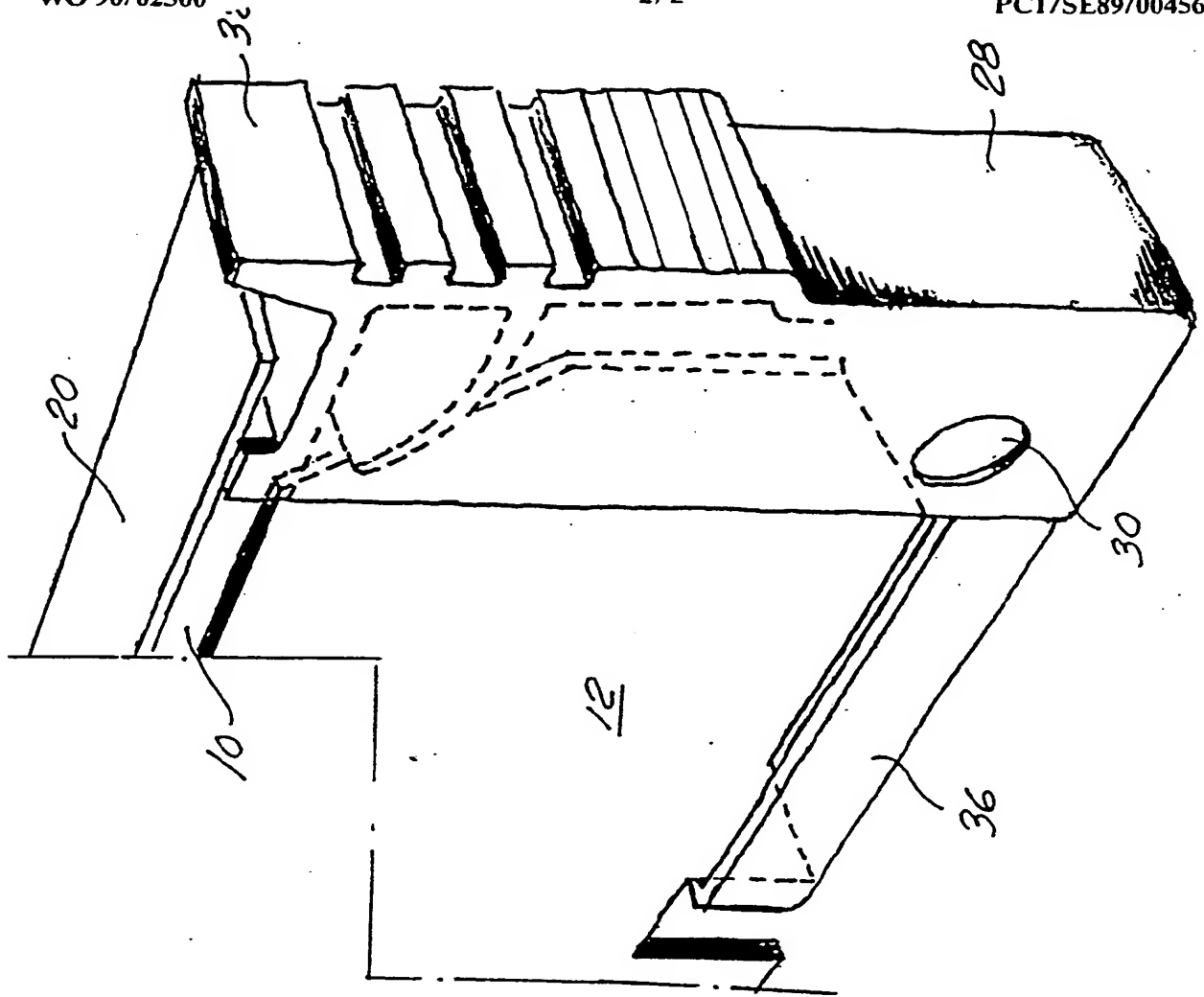


Fig. 4.

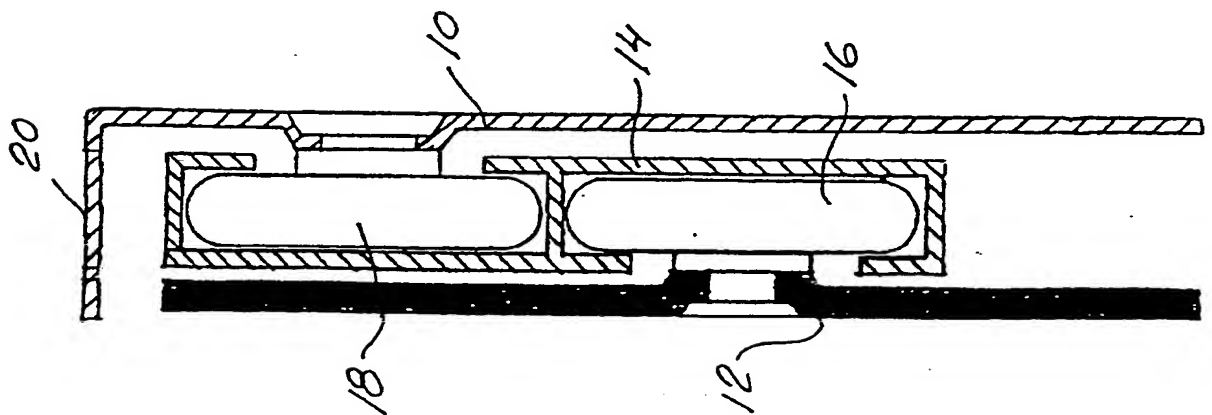


Fig. 3

SUBSTITUTE SHEET,

# INTERNATIONAL SEARCH REPORT

International Application No. PCT/SE89/0048

## I. CLASSIFICATION OF SUBJECT MATTER (If several classification symbols apply, indicate all)

According to International Patent Classification (IPC) or to both National Classification and IPC:

A 47 B 88/12

## II. FIELDS SEARCHED

Minimum Documentation Searched:

Classification System

Classification Symbols

IPC 4	A 47 B 57/04, 55/00-06, 55/12, 88/16-20
IPC 2	A 47 B 96/10
US Cl	108:137, 143 248:242 308:3.6, 3.8 312:330, 333-336, 348

Documentation Searched other than Minimum Documentation  
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SE, NO, DK, FI classes as above

## III. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of Document, ** with indication, where appropriate, of the relevant passages **	Relevant to Claim No. **
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A	SE, C, 175 912 ( C J BJÖRGE ) 4 July 1961	1, 4
A	SE, B, 360 971 ( C J BJÖRGE ) 15 October 1973	1
A	SE, E, 372 165 ( C J BJÖRGE ) 16 December 1975	1
A	FR, A, 1 221 467 ( VICKERS-ARMSTRONG ) 2 June 1960	4-6
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## IV. CERTIFICATION

Date of the Actual Completion of the International Search

1989-11-10

Date of Mailing of this International Search Report

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